

AMENDMENTS TO THE DRAWINGS

The attached sheet of drawings includes changes to Figures 1 and 3 to show that the base of the pot has apertures. The circled portions on the annotated sheet delineate where the changes have been made,

Attachment: Replacement sheet
Annotated sheet showing changes

REMARKS

The continued requirement for replacement drawing sheets with the legends Replacement Sheets and Annotated Sheets is not understood because they were attached to the last response and appear in the IFW. Those sheets are being resubmitted with this response. If these are found to be deficient in any way, a telephone explanation would be greatly appreciated.

In the foregoing amendments, claims 1 and 6 have been combined to require at least one plant to be grown under drought stress. The changes to other claims are editorial only and do not change the scope thereof.

A Declaration of Jean Cuypers is submitted herewith.

The rejections of claims 1, 2, 4, 6, 7, 10, 11 and 13-15 under 35 USC § 103 over Deckers, of claims 3, 5 and 12 under 35 USC § 103 over Deckers in view of Blaakmeer, and of claims 8, 9, 16 and 17 under 35 USC § 103 over Deckers in view of Struuk are all respectfully traversed.

As discussed in the specification at page 2, line 9 to page 3 line 32, growing plants under conditions of drought stress can give advantageous properties of the final plant but it is problematic to apply drought stress or nutrient stress conditions to the plants or sets of plants and obtain uniform resulting properties. The invention claimed in this application is based on the discovery of a system which permits pot plants, even large numbers of pot plants, to be grown and receive uniform amounts of water during the growth process, thus leading to uniform growth. The invention is particularly valuable

because it allows the application of drought or nutrient stress methods to pot plants without leading to non-uniformity of the resulting set of plants.

There are two important features of the invention which are missing from the disclosure of Deckers. They are that the two growth substrates have been selected such that (1) the first growth substrate has a water uptake capacity which is greater than the water uptake capacity of the second growth substrate, so that water will move from the second substrate into the first substrate when they are in contact and (2) the first growth substrate has a sinking time which is greater than the sinking time of the second growth substrate, which means that the first substrate is less hydrophilic than the second substrate.

The rejections advanced in Office Action appears to be based, at least in part, on two assumptions which are not valid. The first incorrect assumption is that all peat has the same water uptake capacity and sinking time. For example, the Office Action appears to rely on this assumption on page 3 and also page 4, when commenting that peat has a greater water capacity than mineral wool which has a density of 60kg/m³. However, both of these characteristics are dependent on how the peat was processed. As a result, it is not possible to assume that the water capacity and the sinking time have any particular values just from the knowledge that the substance is peat. Because of the water uptake capacity is dependent on how the peat was processed, it is impossible to conclude that the peat has a greater water capacity than 60kg/m³ density mineral wool from the mere fact that "peat" is being used. Even if the selected peat did happen to have a greater water capacity than the mineral wool, that does not mean the sinking times were the same or different or which entity had a greater sinking time.

The second incorrect assumption is that an “ebb and flood” procedure is the same or effectively the same as drought stress. The term “ebb and flood” is used to reflect that the water is not being uniformly supplied but instead varies over time from periodic flooding the plant by providing a high amount of water and then an ebb stage in which the water is supplied in a lesser amount. This procedure has the object of ensuring that the plants have the optimum amount of water at all times. Allowing the water level to fall below the requirements of the plant is contrary to the object of an “ebb and flood” system. A drought stress procedure, in contrast, involves periods not only of deliberate water deficit but also for a time sufficient for the water level to fall below the requirements of the plant. “Ebb and flood” systems will rarely, if ever, give rise to drought stress.

The Office Action asserts on page 2 that Deckers involves use of a first growth substrate “which has a first water uptake capacity and a first sinking time”. The “first” and “second” characterizations implies there is something in Deckers which concerns uptake capacity and sinking time. But review of this reference does not reveal anything relevant. Neither these terms nor their concepts (i.e., a description using other terminology) are used. Deckers thus fails to suggest that the water uptake capacity and hydrophilicity of two contacting substrates should have any particular relationship or significance. Deckers does not state or imply that either water uptake capacity or sinking time is a result effecting variable even for a single layer, much less that the relative values in two layers are result effecting variables. Deckers does not suggest that both parameters in combination is a result effecting variable. Accordingly, Deckers does not provide any basis for even suggesting that experimentation to find an appropriate combination should be undertaken.

The discussion of Figure 3 at page 5 lines 4 to 12 is the only part of Deckers where there is any description of growth of plants using more than one discrete substrate. There is a mat of mineral wool 11 and a block 18 in which plants are positioned, but neither the composition or properties of the substrate block 18 are mentioned. The Office Action avers it would be obvious to use peat as the substrate because it is a known substrate, is inexpensive, and has the "right" water uptake and sinking time properties. The incorrect assumption about last part of this contention has already been discussed. The assertion about cost cites no factual basis. In any event, immediately following the reference to peat on page 1 of Deckers, is a statement that mineral wool is an advantageous replacement for prior art substrates such as peat. In light of that statement, why would block 18 be made of peat? The fact that peat is a known substrate does not suggest its use in the claimed configuration or selection of a peat having water uptake and sinking properties which are any particular values.

Several other reasons which reinforce a conclusion that the substrate block 18 would also be made of mineral wool and not peat were discussed in the prior response. Another reason is that dry peat is hydrophobic and very difficult to rewet. The rewetting difficulty increases as the dryness of the peat increases. As earlier noted, the drought stress process is designed to deprive the plant of water for a significant period of time, and it will be apparent that during the deprivation period, any water in the peat is being taken from the substrate by the plant, thereby acting to further dry the peat. If the peat is allowed to dry out significantly, water applied thereafter cannot effectively rewet the peat. This characteristic would discourage the use of peat in any drought stress process.

In light of the foregoing discussion, the unobviousness of the claimed invention over Deckers is apparent and there is no need to discuss the other contentions made in the Office Action.

The rejections of some claims over a combination of Deckers and other references is likewise untenable. Neither Blaakmeer nor Struyk have been cited to disclose any combination of relative sinking times and water uptake capacities, and in fact, they do not do so. As a result, the proposed combination of references cannot render any of the pending claims obvious.

In view of the above amendment, applicant believes the pending application is in condition for allowance.

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Respectfully submitted,

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